

## **REMARKS**

### **Status of Application**

Claims 1-20 were pending in the application. By this amendment, claims 9 and 16 are canceled and claims 21-26 are added. Thus, the status of the claims is as follows:

Claims 6, 7, 10-12, 15, and 17-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claims 1-5, 8, 13, and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Application Publication No. US 2003/0174230 to Ide et al. ("Ide") in view of U.S. Application Publication No. US 2003/0146988 to Shiraishi ("Shiraishi").

### **Objection to the Title**

The objection to the title of the invention as not being descriptive is noted and a new title is presented in this Amendment which is clearly indicative of the invention to which the claims are directed. Accordingly, reconsideration and withdrawal of the objection is respectfully requested.

### **Claim Amendments**

Claims 1 and 11 have been amended to more completely describe the claimed invention. Additional support for the amendments to claim 11 can be found in paragraph [0101]. These changes do not introduce any new matter.

Claims 2-4, 6, 7, 10, 15, and 17-19 have been amended to correctly follow the corresponding antecedent basis of amended claim 1. Claims 17-19 have further been amended to depend from new claim 21. These changes are not necessitated by the prior art,

are unrelated to the patentability of the invention over the prior art, and do not introduce any new matter.

### **New Claims**

New claim 21 relates to the controller switching between two control modes as found in paragraph [0009]. New claim 22 depends from claim 21 and includes forcedly driving the focusing member to an initial position as found in paragraph [0101]. New claim 23 generally includes the limitations of original claim 1 and switching the control mode as found in paragraph [0009]. New claim 24 generally corresponds to a method claim based upon FIG. 15. New claim 25 relates to a second control mode as found in paragraph [0009], but depends from new claim 24. New claim 26 depends from claim 4 and includes forcedly driving the focusing member to an initial position as found in paragraph [0101]. Thus, new claims 21-26 do not introduce any new matter.

### **35 U.S.C. § 112 Rejection**

The rejection of claims 6, 7, 9-12, 15, and 17-20 under the second paragraph of 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention, is respectfully traversed based on the following.

Claims 6, 7, 9-12 and 15 were rejected due to the purported indefiniteness of the phrase losing “the track,” with respect to the main subject. Claims 6, 7, 9-11, and 15 have been amended to use the phrase “loss of the main subject.” The phrase “loss of a subject” is introduced in the present application in paragraph [0083], and is used thereafter. Claim 1 has been amended to similarly use the phrase “loss of the main subject,” thereby resulting in consistent terminology within the present specification including the claims. Paragraph [0083] defines “loss of a subject” to be “A case such that the focus lens group 301 changes from the state in which the focus lens unit is near the infocus lens position FP to the state where the focus lens unit 301 is away from the infocus lens position FP.” Claim 12 was

rejected due to its dependence upon claim 11, which previously included "the track." It is believed that the amended claims, which employ the phrase "loss of the main subject," particularly point out and distinctly claim the subject matter.

Claim 17-20 were rejected due to their dependence upon claim 16, which included the limitation, "when the present infocus position becomes unspecified during control in the first mode, control in the first mode is continued." Claims 17-20 now depend, either directly or indirectly, from new claim 21. As new claim 21 does not include the limitations, "when the present infocus position becomes unspecified during control in the first mode, control in the first mode is continued," claims 17-20 are believed to particularly point out and distinctly claim the subject matter.

Accordingly, it is respectfully requested that the rejection of claims 6, 7, 10-12, 15, and 17-20 under the second paragraph of 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention, be reconsidered and withdrawn.

### **35 U.S.C. § 103(a) Rejection**

The rejection of claims 1-5, 8, 13, and 14 under 35 U.S.C. § 103(a), as being unpatentable over Ide in view of Shiraishi, is respectfully traversed based on the following.

Claim 1 includes the following limitations:

a controller for moving a position of a focus area which is set in an image formed by the light image so that the focus area includes a main subject, determining a present infocus position from a plurality of pieces of information in the focus area, obtained by driving said optical system around a reference position determined on the basis of a prior infocus position, and moving said optical system to the present infocus position by controlling said focusing member, wherein

at the time of loss of the main subject, said controller continues the control in which the present infocus position is determined by driving said

optical system around a reference position determined on the basis of a latest infocus position as an extended control state.

Thus, the image capturing apparatus of claim 1 is a continuous auto focus ("AF") device, which will maintain focus on a moving subject by using pattern drive AF control. This is in contrast to a one-shot AF device in which once the device achieves focus, it does not attempt to update the focus. *See* paragraphs [0003] and [0004] of the present application. The image capturing apparatus of claim 1 differs from prior art continuous AF devices in that it does not completely restart the AF process due to unexpected movement of the subject or camera shake, i.e., "loss of the main subject." *See* [0005] of the present application.

One, non-limiting example of the overall focusing process, is illustrated in FIG. 15. In particular, the device undertakes a one-shot AF control sequence to find an initial infocus condition. *See* paragraph [0129]. The one-shot AF control sequence is followed by a pattern drive sequence that continuously updates the infocus condition should the subject move slightly, i.e., a continuous AF sequence. *See* paragraph [0130]. Should the subject move significantly, the subject would be "lost," at time TL. *See* paragraph [0131]. At the time the main subject is lost, the controller will continue to control the optical system by "driving said optical system around a reference position corresponding to a latest infocus position." In other words, it does not completely restart the AF process by initiating the time consuming one-shot AF process again, but rather enters an extended control state.

Turning first to *Ide*, the Examiner asserts, "said controller continues to drive said optical system around a reference position (note that if the subject moves out of the area FR the system will continue to perform focusing)." *See* page 4 of April 20, 2007 Office Action. The Office Action provides no support for the above assertion. This lack of support is most likely true because *Ide* only discloses use of the one-shot AF process illustrated in FIG. 7 of *Ide*. Further, *Ide* is completely silent with respect to losing the subject, as paragraph [0072] notes the system finds the infocus position P "where the subject is stationary." Thus, *Ide* provides no disclosure for what it might do, "at the time of loss of the main subject," and certainly no disclosure that *Ide*'s controller "continues the control in which the present

infocus position is determined by driving said optical system around a reference position determined on the basis of a latest infocus position as an extended control state.”

Because Ide does not disclose a pattern drive AF controller, let alone one that addresses the “loss of the main subject,” the Examiner raises Shiraishi. Shiraishi appears to disclose a pattern drive sequence in which the driving step number is set to  $N < M$ , i.e., to a position close to a previous infocus position. Paragraph [0057] and step S12. Shiraishi appears to disclose the one-step AF process, i.e., the case when the driving step number is set to  $M$ , which is “the driving step number which scans the total ranging object range.” Paragraph [0055] and step S13. In step S7, should focus be lost (the main subject is lost), Shiraishi executes step 13, which is the one-step AF process, thereby scanning the total ranging object range. *See* paragraphs [0051] and [0055] and FIG. 2. Thus, as with Ide, Shiraishi fails to disclose an extended control state employing a pattern drive sequence after loss of the main subject. For this reason, even the combination of Ide and Shiraishi does not render obvious claim 1, which requires “at the time of loss of the main subject, said controller continues the control in which the present infocus position is determined by driving said optical system around a reference position determined on the basis of a latest infocus position as an extended control state.”

Claims 2-5, 8, 13, and 14 depend, either directly or indirectly from claim 1. As the combination of Ide and Shiraishi fail to disclose or suggest each limitation of claim 1, the combination cannot render obvious the inventions of claims 2-5, 8, 13, and 14.

Accordingly, it is respectfully requested that the rejection of claims 1-5, 8, 13, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Ide in view of Shiraishi, be reconsidered and withdrawn.

Application No. 10/706,358  
Amendment dated July 13, 2007  
Reply to Office Action of April 20, 2007

### **CONCLUSION**

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment increases the number of independent claims by one from two to three (3 claims previously paid for), increases the total number of claims by four from 20 to 24, but does not present any multiple dependency claims. Accordingly, a Response Transmittal and Fee Authorization form authorizing the amount of \$200.00 to be charged to Sidley Austin LLP Deposit Account No. 18-1260 is enclosed herewith in duplicate. However, if the Response Transmittal and Fee Authorization form is missing, insufficient, or otherwise inadequate, or if a fee, other than the issue fee, is required during the pendency of this application, please charge such fee to Sidley Austin LLP Deposit Account No. 18-1260.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

Application No. 10/706,358  
Amendment dated July 13, 2007  
Reply to Office Action of April 20, 2007

and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

By: Mark A. Dodd  
Mark A. Dodd  
Registration No. 45,729  
Attorney for Applicants

MAD/llb:bar  
SIDLEY AUSTIN LLP  
717 N. Harwood, Suite 3400  
Dallas, Texas 75201  
Direct: (214) 981-3481  
Main: (214) 981-3300  
Facsimile: (214) 981-3400  
July 12, 2007